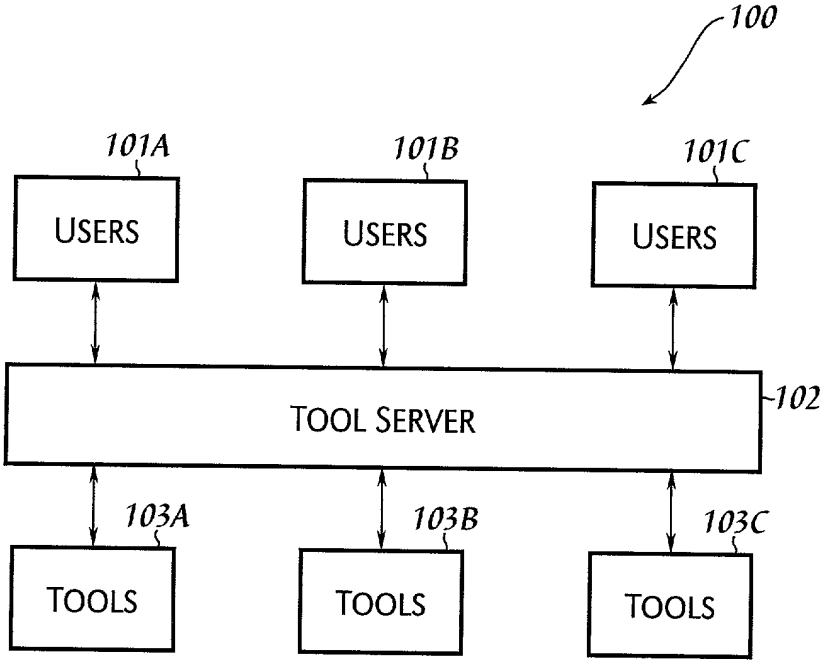
100
101A
101B
101C
USERS
USERS
USERS
TOOL SERVER
102
103A
103B
103C
TOOLS
TOOLS
TOOLS

Fig.1

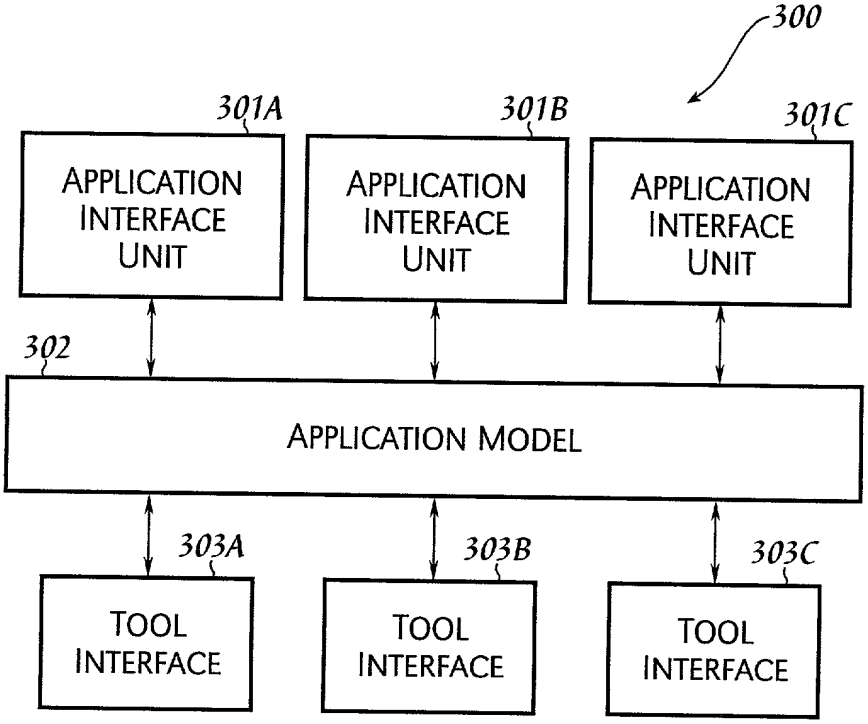
300
301A
301B
301C
APPLICATION INTERFACE UNIT
APPLICATION INTERFACE UNIT
APPLICATION INTERFACE UNIT
302
APPLICATION MODEL
303A
303B
303C
TOOL INTERFACE
TOOL INTERFACE
TOOL INTERFACE

Fig. 3

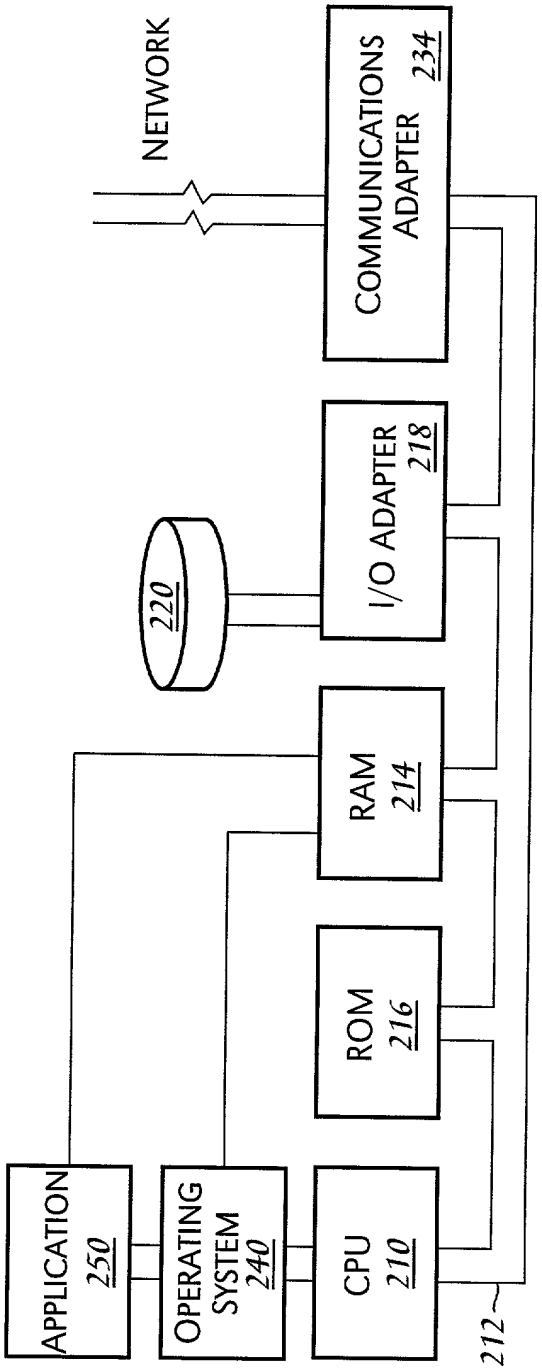
102
NETWORK
COMMUNICATIONS ADAPTER 234
I/O ADAPTER 218
220
RAM 214
ROM 216
CPU 210
OPERATING SYSTEM 240
APPLICATION 250
212

Fig. 2

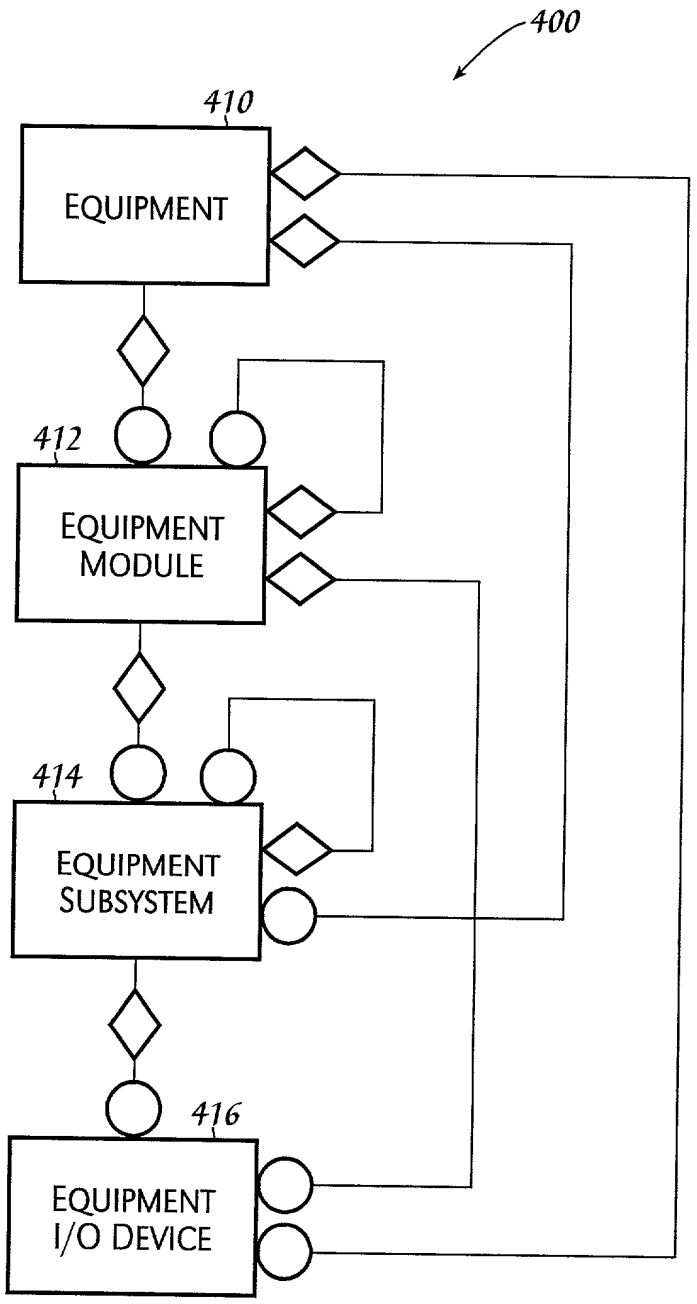
400
410
EQUIPMENT
412
EQUIPMENT MODULE
414
EQUIPMENT SUBSYSTEM
416
EQUIPMENT I/O DEVICE

Fig. 4

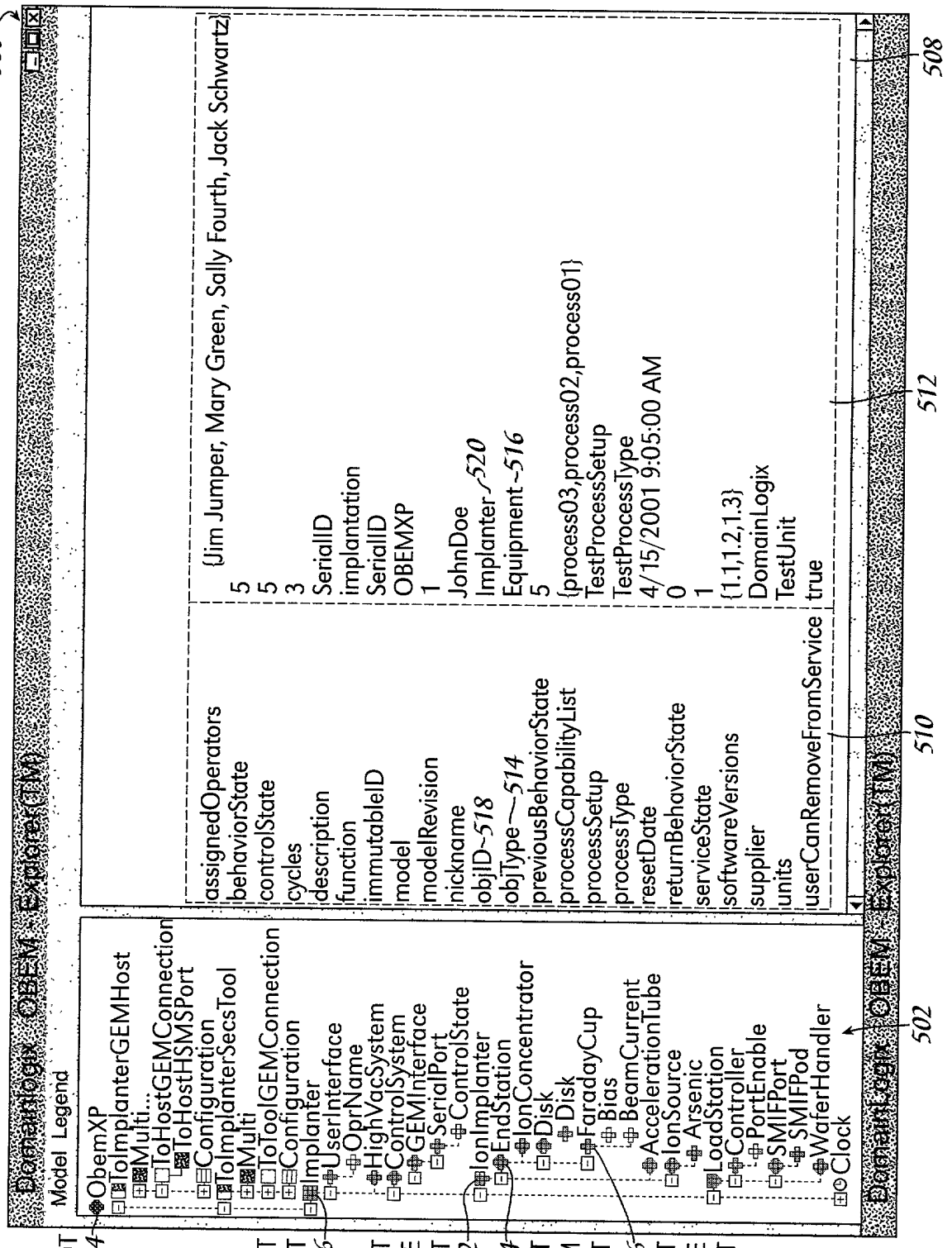
500
DomainLogix OBEM Explorer(TM)
Model Legend
ROOT
504
ObemXP
ToImplanterGEMHost
Multi...
ToHostGEMConnection
ToHostHSMSPort
Configuration
ToImplanterSecsTool
Multi
ToToolGEMConnection
Configuration
EQUIPMENT OBJECT
506
Implanter
UserInterface
OprName
HighVacSystem
ControlSystem
GEMInterface
SerialPort
ControlState
EQUIPMENT MODULE OBJECT
522
IonImplanter
EndStation
IonConcentrator
Disk
Disk
FaradayCup
Bias
BeamCurrent
AccelerationTube
IonSource
Arsenic
LoadStation
Controller
PortEnable
SMIFPort
SMIFPod
WaferHandler
Clock
524
EQUIPMENT SUBSYSTEM OBJECT
526
EQUIPMENT I/O DEVICE OBJECT
502
assignedOperators
behaviorState
controlState
cycles
description
function
immutableID
model
modelRevision
nickname
objID~518
objType~514
previousBehaviorState
processCapabilityList
processSetup
processType
resetDate
returnBehaviorState
serviceState
softwareVersions
supplier
units
userCanRemoveFromService
{Jim Jumper, Mary Green, Sally Fourth, Jack Schwartz}
5
5
3
SerialID
implantation
SerialID
OBEMXP
1
JohnDoe
Implanter~520
Equipment~516
5
{process03,process02,process01}
TestProcessSetup
TestProcessType
4/15/2001 9:05:00 AM
0
1
{1.1,1.2,1.3}
DomainLogix
TestUnit
true
512
510
DomainLogix OBEM Explorer(TM)
508

Fig. 5

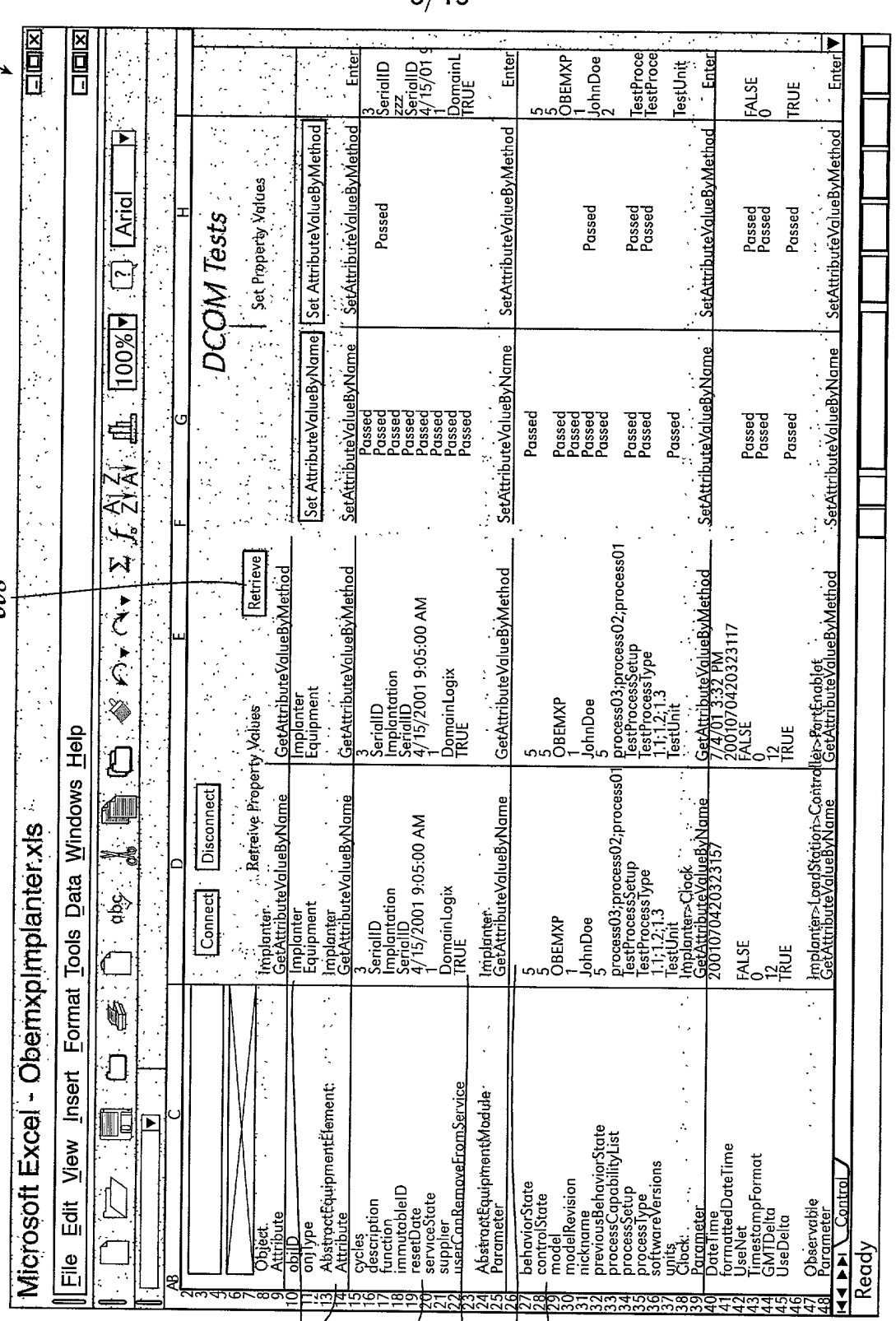
600
608
Microsoft Excel - ObemxpImplanter.xls
File Edit View Insert Format Tools Data Windows Help
Connect
Disconnect
Retrieve
DCOM Tests
Set Property Values
Retrieve Property Values
606A
602A
602B
606B
606C
602C
Ready

Fig. 6

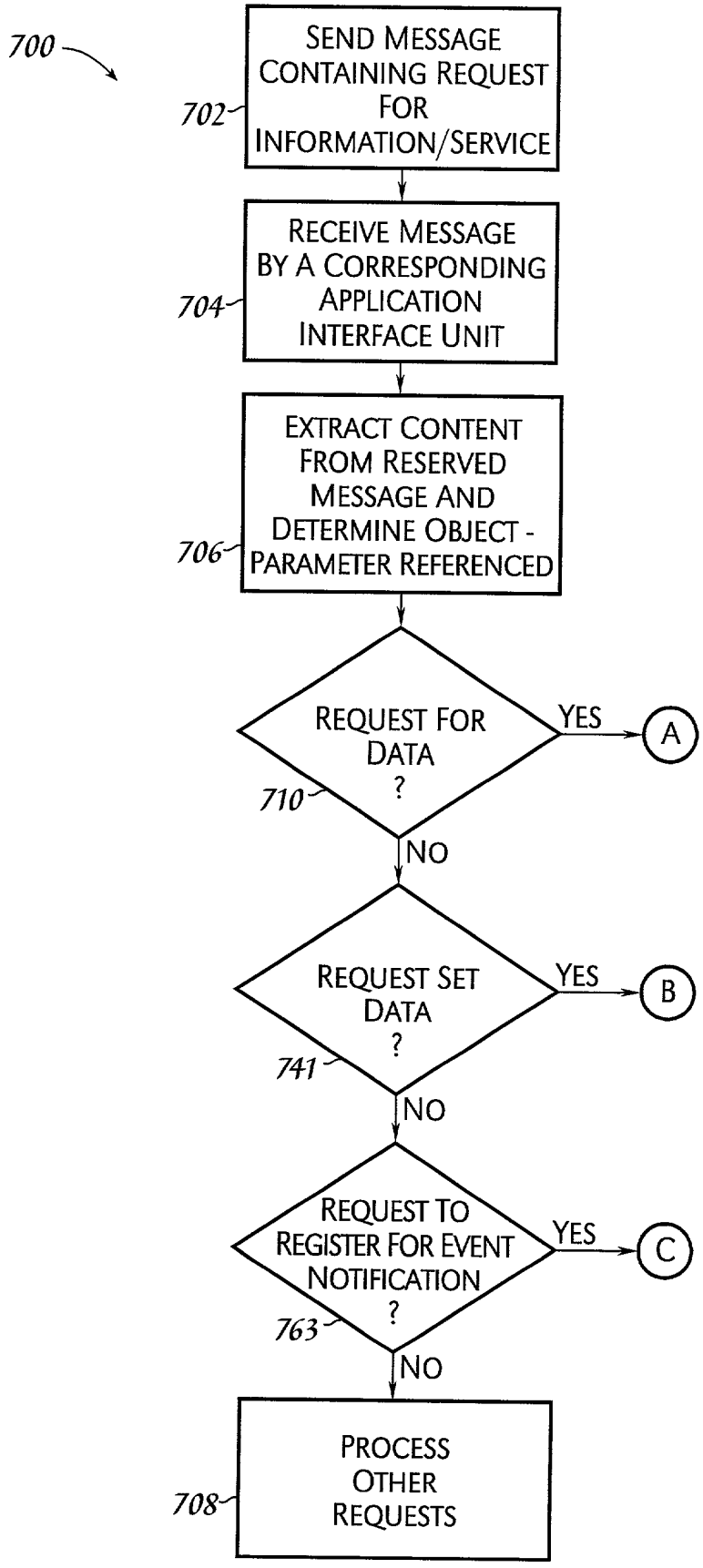
700
SEND MESSAGE CONTAINING REQUEST FOR INFORMATION/SERVICE
702
RECEIVE MESSAGE BY A CORRESPONDING APPLICATION INTERFACE UNIT
704
EXTRACT CONTENT FROM RESERVED MESSAGE AND DETERMINE OBJECT - PARAMETER REFERENCED
706
REQUEST FOR DATA ?
710
YES
A
NO
REQUEST SET DATA ?
741
YES
B
NO
REQUEST TO REGISTER FOR EVENT NOTIFICATION ?
763
YES
C
NO
PROCESS OTHER REQUESTS
708

Fig. 7

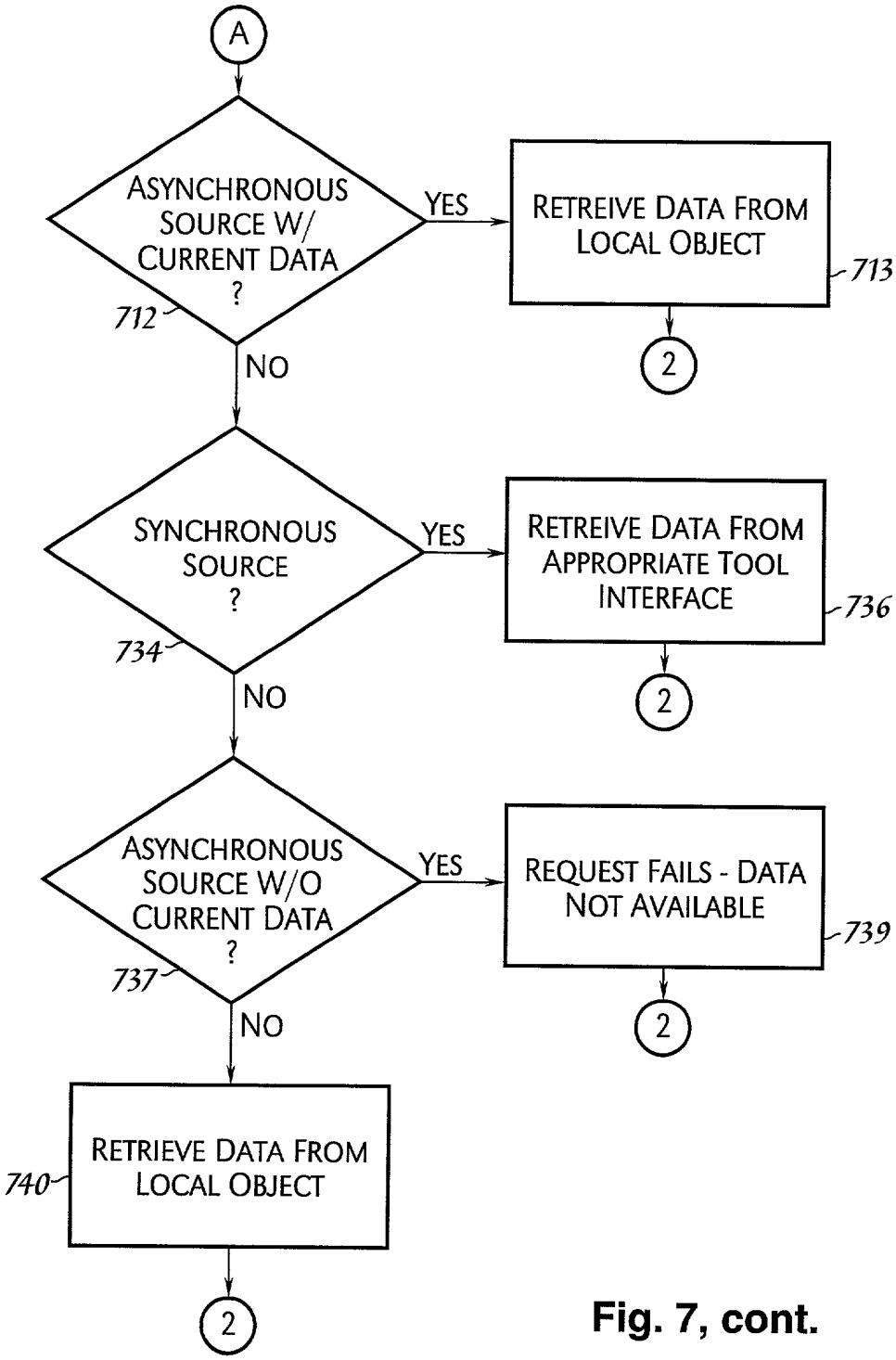
A
ASYNCHRONOUS SOURCE W/ CURRENT DATA ?
712
YES
RETREIVE DATA FROM LOCAL OBJECT
713
2
NO
SYNCHRONOUS SOURCE ?
734
YES
RETREIVE DATA FROM APPROPRIATE TOOL INTERFACE
736
2
NO
ASYNCHRONOUS SOURCE W/O CURRENT DATA ?
737
YES
REQUEST FAILS - DATA NOT AVAILABLE
739
2
NO
RETRIEVE DATA FROM LOCAL OBJECT
740
2

Fig. 7, cont.

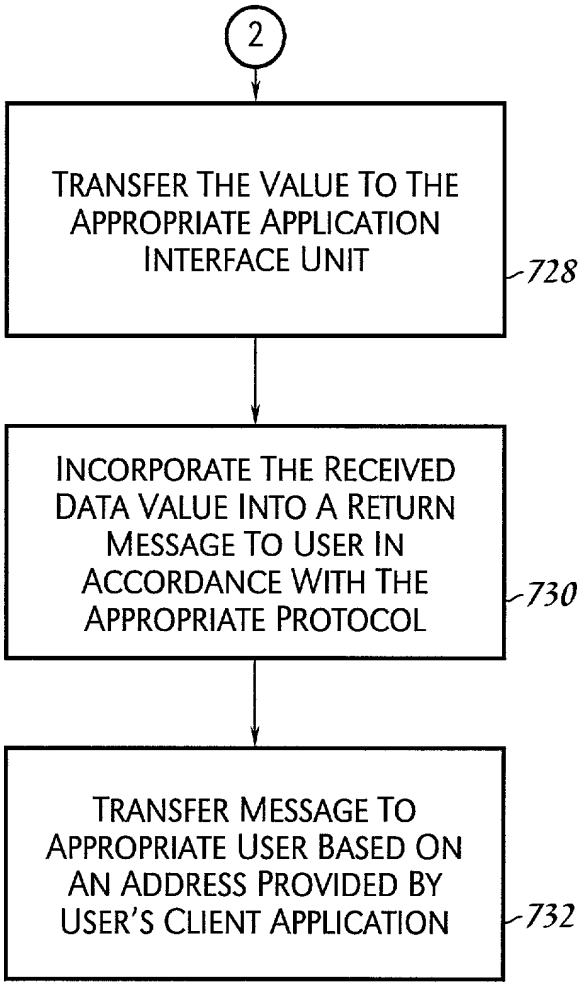
2
TRANSFER THE VALUE TO THE APPROPRIATE APPLICATION INTERFACE UNIT
728
INCORPORATE THE RECEIVED DATA VALUE INTO A RETURN MESSAGE TO USER IN ACCORDANCE WITH THE APPROPRIATE PROTOCOL
730
TRANSFER MESSAGE TO APPROPRIATE USER BASED ON AN ADDRESS PROVIDED BY USER'S CLIENT APPLICATION
732

Fig. 7, cont.

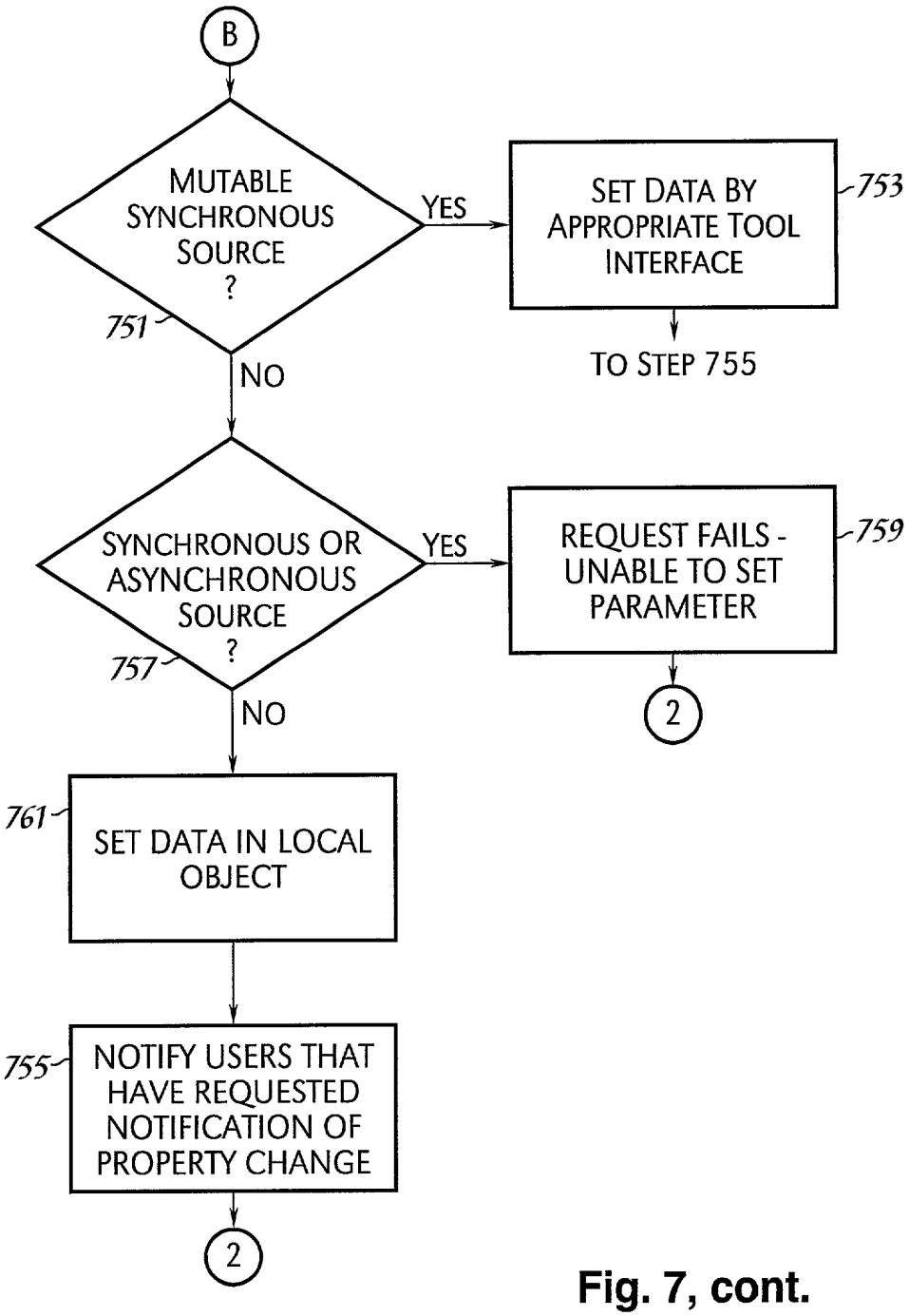
B
MUTABLE SYNCHRONOUS SOURCE ?
751
YES
SET DATA BY APPROPRIATE TOOL INTERFACE
753
TO STEP 755
NO
SYNCHRONOUS OR ASYNCHRONOUS SOURCE ?
757
YES
REQUEST FAILS - UNABLE TO SET PARAMETER
759
2
NO
761
SET DATA IN LOCAL OBJECT
755
NOTIFY USERS THAT HAVE REQUESTED NOTIFICATION OF PROPERTY CHANGE
2

Fig. 7, cont.

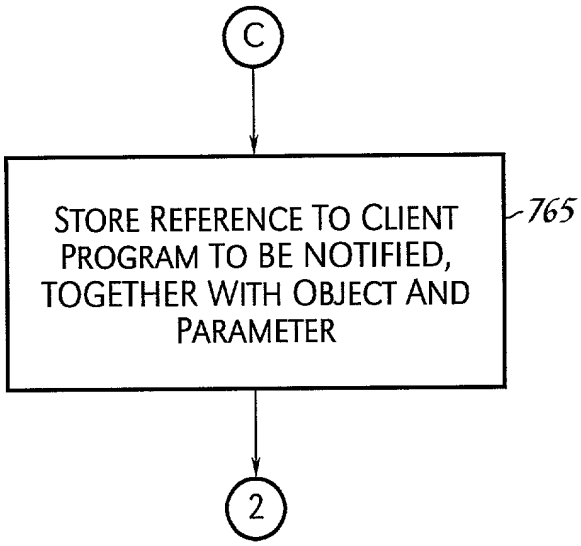
C
STORE REFERENCE TO CLIENT PROGRAM TO BE NOTIFIED, TOGETHER WITH OBJECT AND PARAMETER
765
2

Fig. 7, cont.

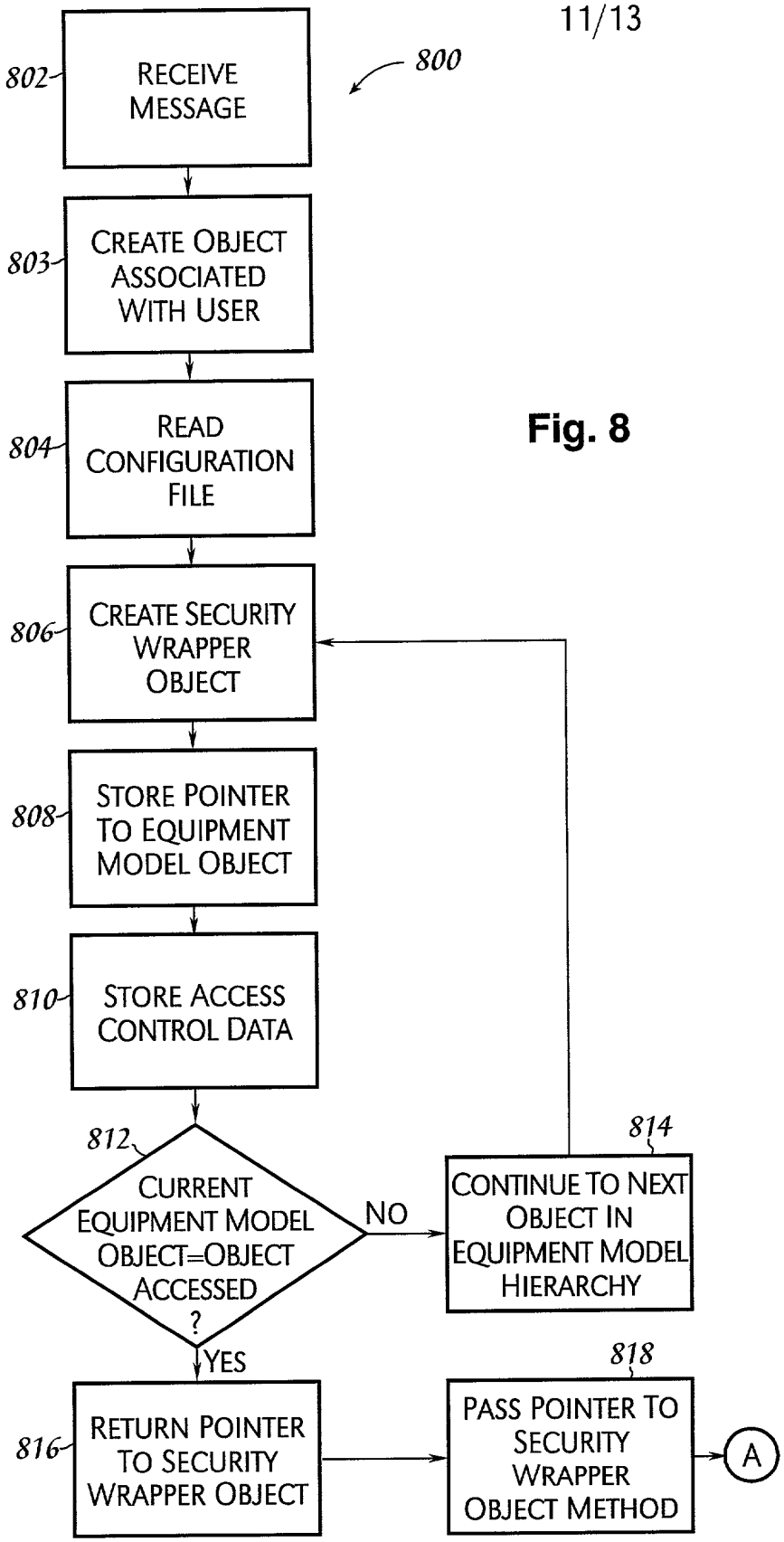
800
802
RECEIVE MESSAGE
803
CREATE OBJECT ASSOCIATED WITH USER
804
READ CONFIGURATION FILE
806
CREATE SECURITY WRAPPER OBJECT
808
STORE POINTER TO EQUIPMENT MODEL OBJECT
810
STORE ACCESS CONTROL DATA
812
CURRENT EQUIPMENT MODEL OBJECT=OBJECT ACCESSED ?
NO
814
CONTINUE TO NEXT OBJECT IN EQUIPMENT MODEL HIERARCHY
YES
816
RETURN POINTER TO SECURITY WRAPPER OBJECT
818
PASS POINTER TO SECURITY WRAPPER OBJECT METHOD
A

Fig. 8

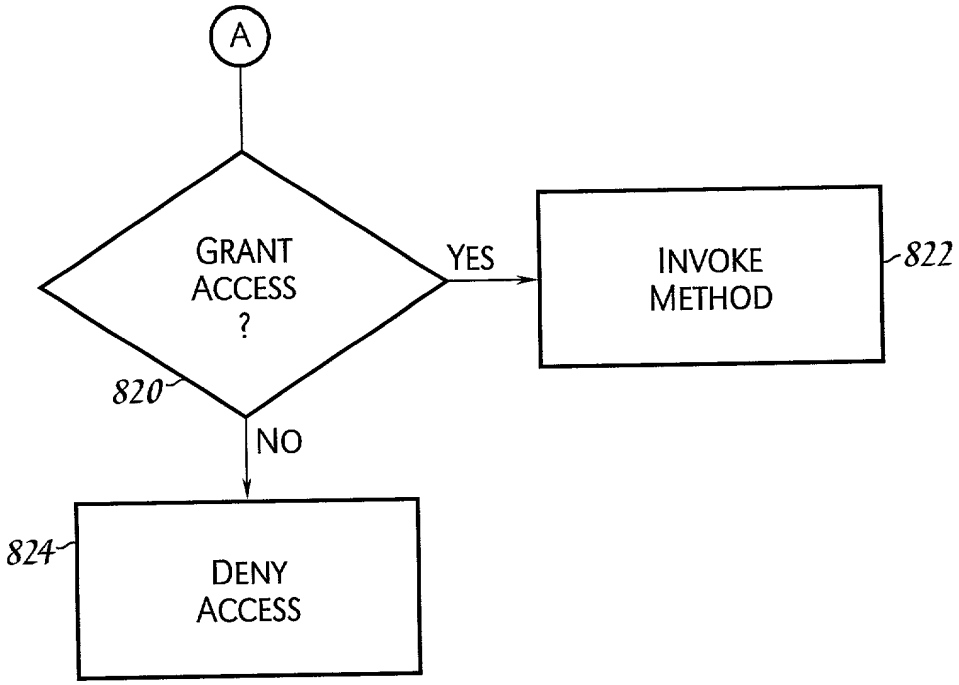

Fig. 8, cont.

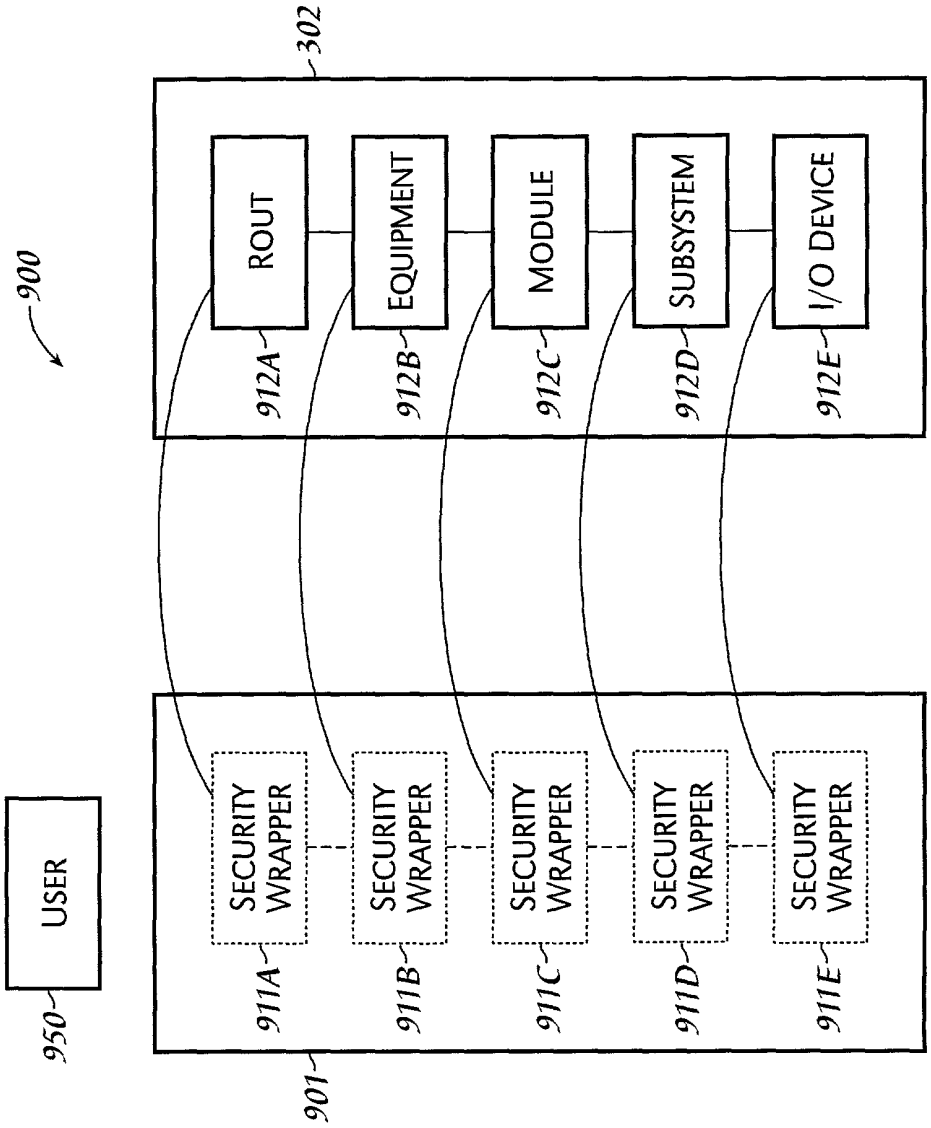
900
950
USER
901
911A
SECURITY WRAPPER
911B
SECURITY WRAPPER
911C
SECURITY WRAPPER
911D
SECURITY WRAPPER
911E
SECURITY WRAPPER
302
912A
ROUT
912B
EQUIPMENT
912C
MODULE
912D
SUBSYSTEM
912E
I/O DEVICE

Fig. 9